

**WAVELENGTH-SELECTIVE ADD/DROP ARRANGEMENT
FOR OPTICAL COMMUNICATION SYSTEMS**

5 ABSTRACT OF THE DISCLOSURE

A WDM input signal received at an add/drop node is coupled onto both a “drop” transmission path and a “through” transmission path within the node. Optical channels to be dropped are then processed within the “drop” path, such as by optical demultiplexing. Because a copy of the same WDM input signal is routed on the “through” path, a dynamically configurable and programmable wavelength blocker selectively blocks the optical channels that are being dropped from the WDM input signal and passes through those optical channels not being dropped onto the “through” path. In an “add” path within the node, optical channels are selectively added, such as by using optical multiplexing. Those optical channels from the multiplexed optical signal that are not designated for “add” (e.g., “unused” channels) are selectively blocked within the “add” transmission path. Optical channels from the “add” and “through” paths are then combined form a WDM output signal.

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